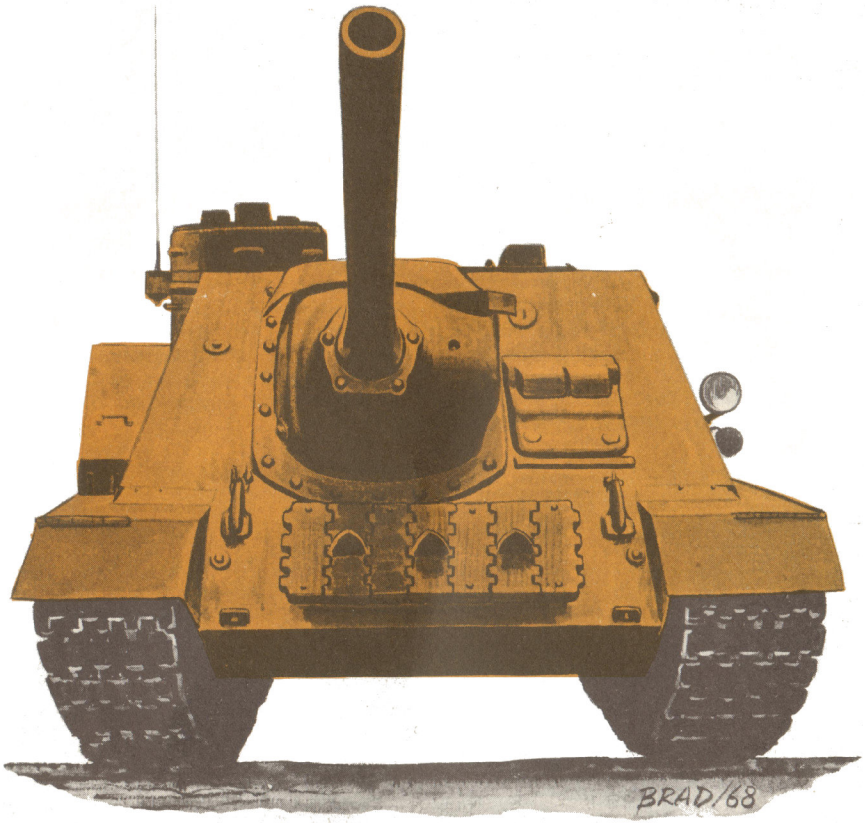
BELLONA

SERIES 2

MILITARY VEHICLE PRINTS



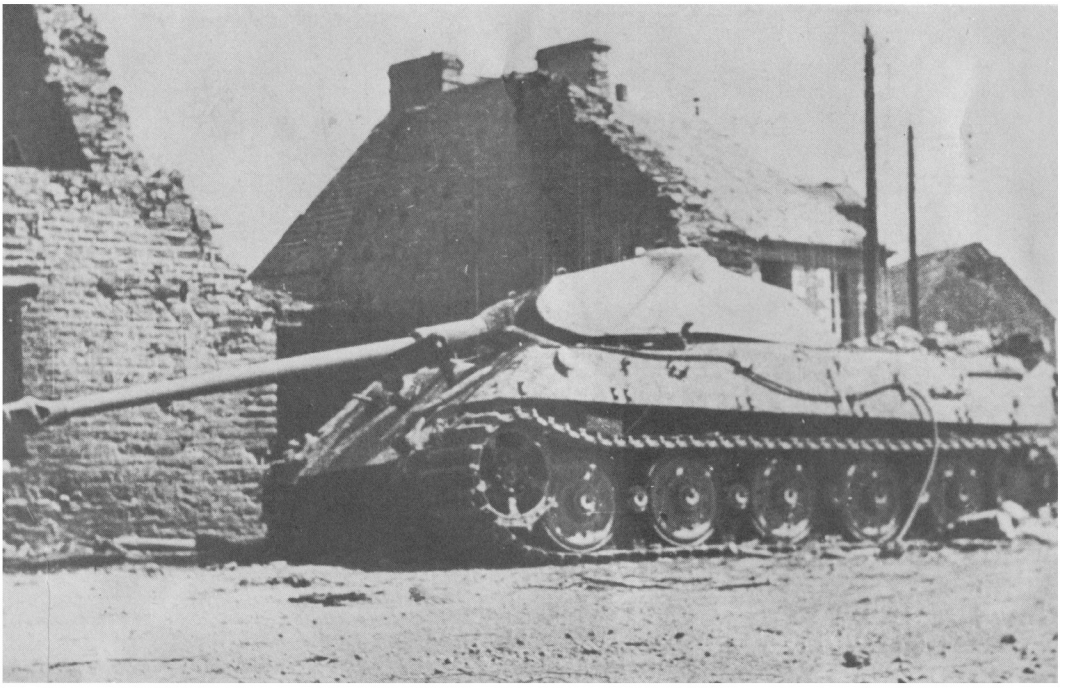
SERIES TWO

Hanomag Sd Kfz 251/1	(GE)
SU 100 Tank Destroyer	(SU)
Sd Kfz 182 Tiger II - Porsche Turret	(GE)
Type 97 Medium CHI - HA	(JA)

DETAILED PLAN VIEWS PRESENTED IN 1:76 & 1:48 SCALE

ABOVE: *This Pz. Kpfw. 'Tiger' Ausf. B. was destroyed during the fighting following the Normandy landing. Note the round front of the Porsche turret and the way this turret sits very far back on the chassis.*

BELOW: *Another "Tiger" Ausf. B. or Koenings Tiger destroyed by air attacks during the fighting near the Falaise Gap in 1944 (Imperial War Museum)*



Pz Kw V1, Sd Kfz 182, TIGER II with Porsche Turret (1943)

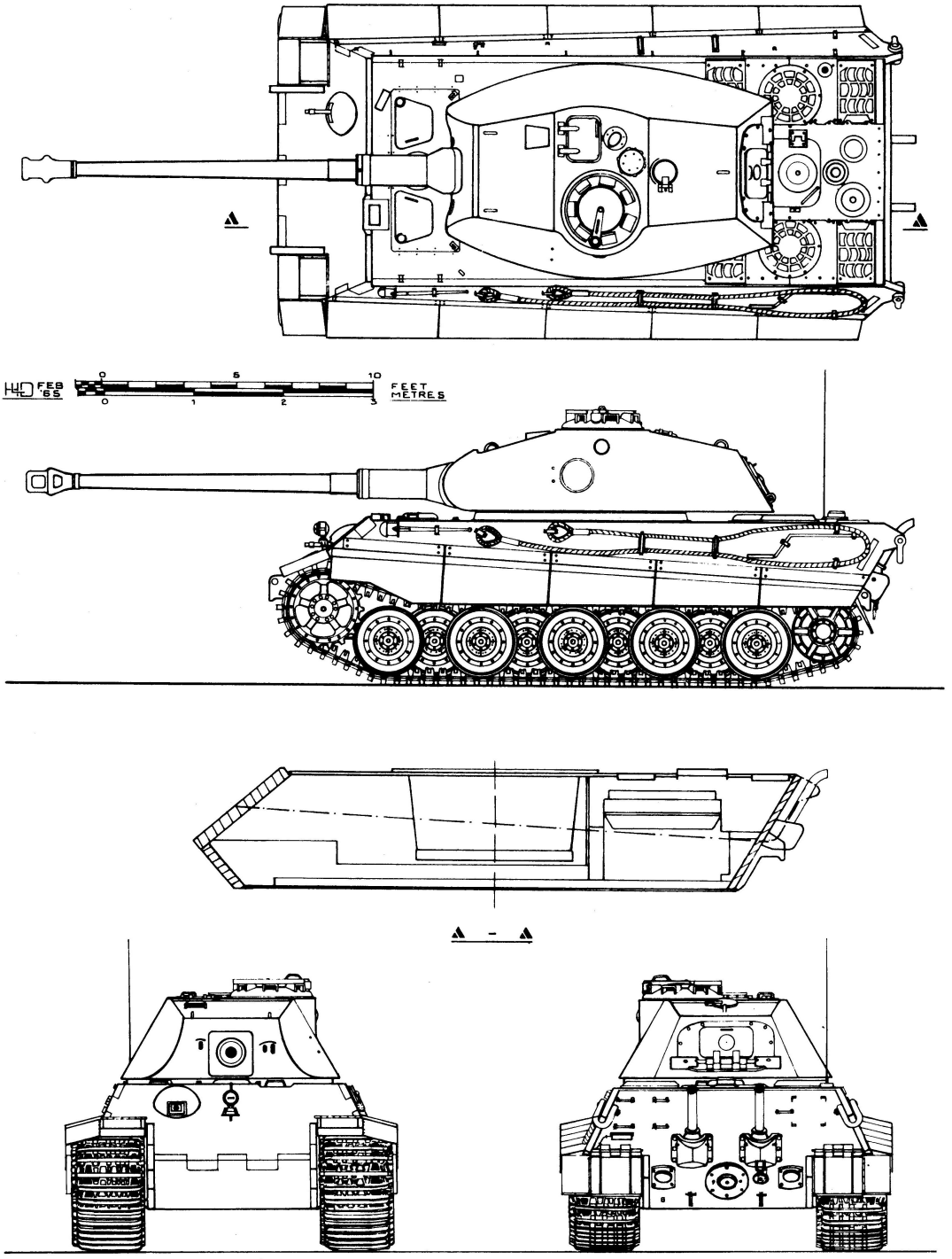
Even before the first Tiger I models were in service it was realised that a better vehicle would be required if German tank superiority was to be restored at Russian expense. Dr. Porsche received orders, therefore, to develop a heavier version of his original Tiger design (Bellona Print Series I) which would mount either a 15 cms. L/37 or a 10.5 cms. L/70 gun. His first design was rejected but the second, which had a rear mounted turret, central engines, and electric transmission, was given a production order. At this time the weapon requirement was altered to call for a standard 8.8 cms. L/71 gun.

Lack of copper, required for the electric transmission, put the Porsche project in some doubt and it was ultimately cancelled, suffering the same fate as the Porsche Tiger I. Meanwhile a parallel design had been ordered from Henschel in January 1943, Design on this vehicle — the VK 4503(H) — was finished in October 1943, three months behind schedule due to insistence by the Production Ministry that features of the projected Panther II should be incorporated in the design. Production began in the following December alongside the Tiger I at Kassell, and the first 50 vehicles utilised the turrets originally produced for the cancelled Porsche design. The drawing show the Henschel Tiger II in this form, but all subsequent production incorporated the Henschel turret.

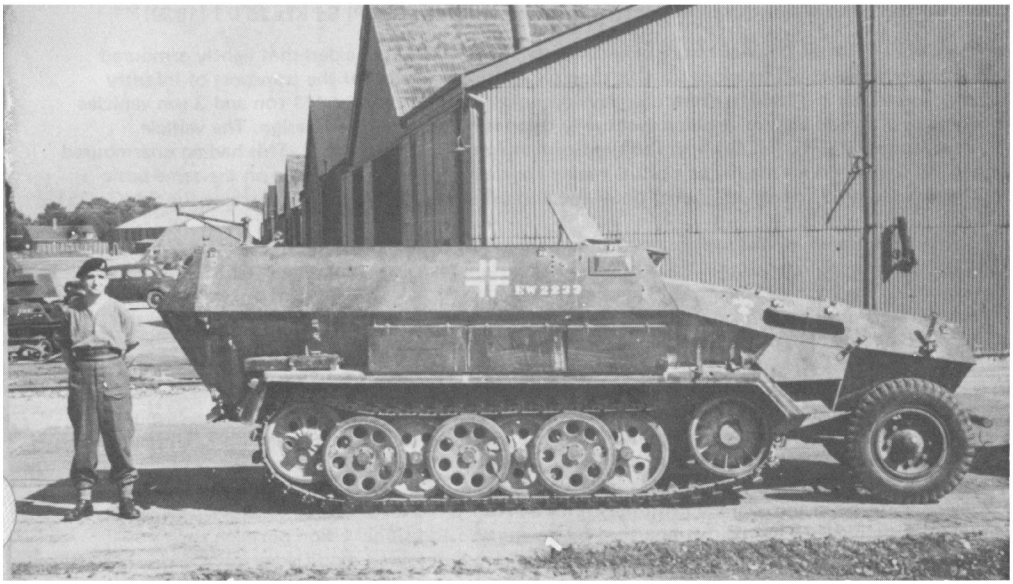
The first vehicles went into service on the Russian front in May 1943, but the type was not met on Western front until the following August. Known as the "Royal (or King) Tiger" to the Allies as the "Koenigs tiger" to the Germans, the Tiger II suffered from lack of power, unreliable nsmission, and short engine life. This is not so serious when it is remembered that the Tiger II was primarily a defensive weapon and that the life expectancy of German tanks was very short at the time of its introduction. Tiger II was the heaviest operational tank of World War II.

Technical Details:

Weight 68.4 tons; Crew 5; Road speed 23.6 to 26 m.p.h., cross-country 9 to 13 m.p.h.; Max. gradient 35 degrees; Fording depth 5ft. 3 ins.; Range 75 to 106 miles; Armament — 1 x 8.8 cms. KwK 43, L71, (78 rounds, A.P., H.E., H.C.), 2 x 7.92 mm. MG-34 one co-axial and one in hull (5,850 rounds); Armour — lower front and turret front 100 mm., upper front 150 mm., sides 80 mm., top surfaces 40 mm. Engine — 1 Maybach HL 230 P30 watercooled V-12 developing 694 b.h.p. at 3000 r.p.m.; Gears 8 forward and 4 reverse, Torsion bar suspension.

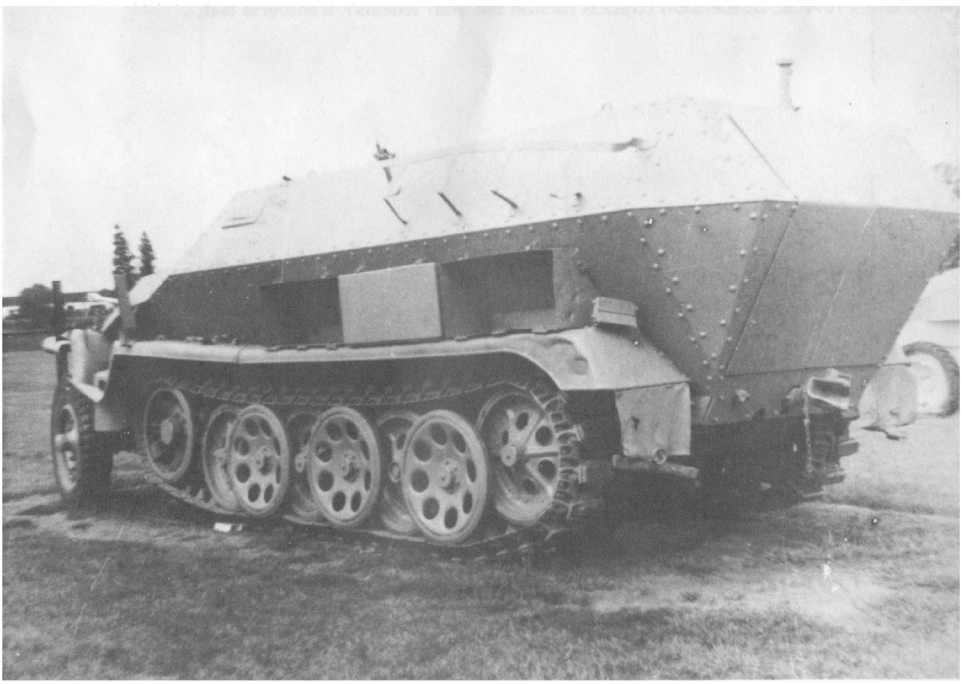


Sd Kfz 182 TIGER 11 with Porsche Turret - 1943
Scale 1:76 (4mm. to 1 Foot). Drawn by H. L. Doyle



ABOVE: *The model of the Sd Kfz 251/1 covered by this series of Bellona Prints is the Model B version which appeared between 1939 and 1940. Later models differed in external details but were basically the same machine. This photograph shows a vehicle captured from the D.A.K. in North Africa. However the EW 2233 is a number added while it was being tested in England. (Imperial War Museum).*

BELOW: *The rear view of an Sd Kfz 251 on display at the A.P.G. in the United States.*



Mittlerer Gerpanzerter Mannschaftstransportwagen (Hanomag HL KL 6P) Sd Kfz 251/1 (1939)

When the German Panzer Divisions were being planned in 1933 it was decided that lightly armoured semi-tracked vehicles would be more suitable than conventional lorries for the transport of infantry and support services. In 1934-35, therefore, development was started on both 1 ton and 3 ton vehicles of this type, the firm of Hanomag being eventually responsible for the 3 ton design. The vehicle finally evolved was the HL KL 6, known to the German Army as the Sd Kfz II. This had an unarmoured body and went into service mainly as a prime mover for field artillery. Meanwhile on the same basic chassis, Hanomag had fitted an armoured body and this vehicle – the HL KL 6P- became the Sd Kfz 251.

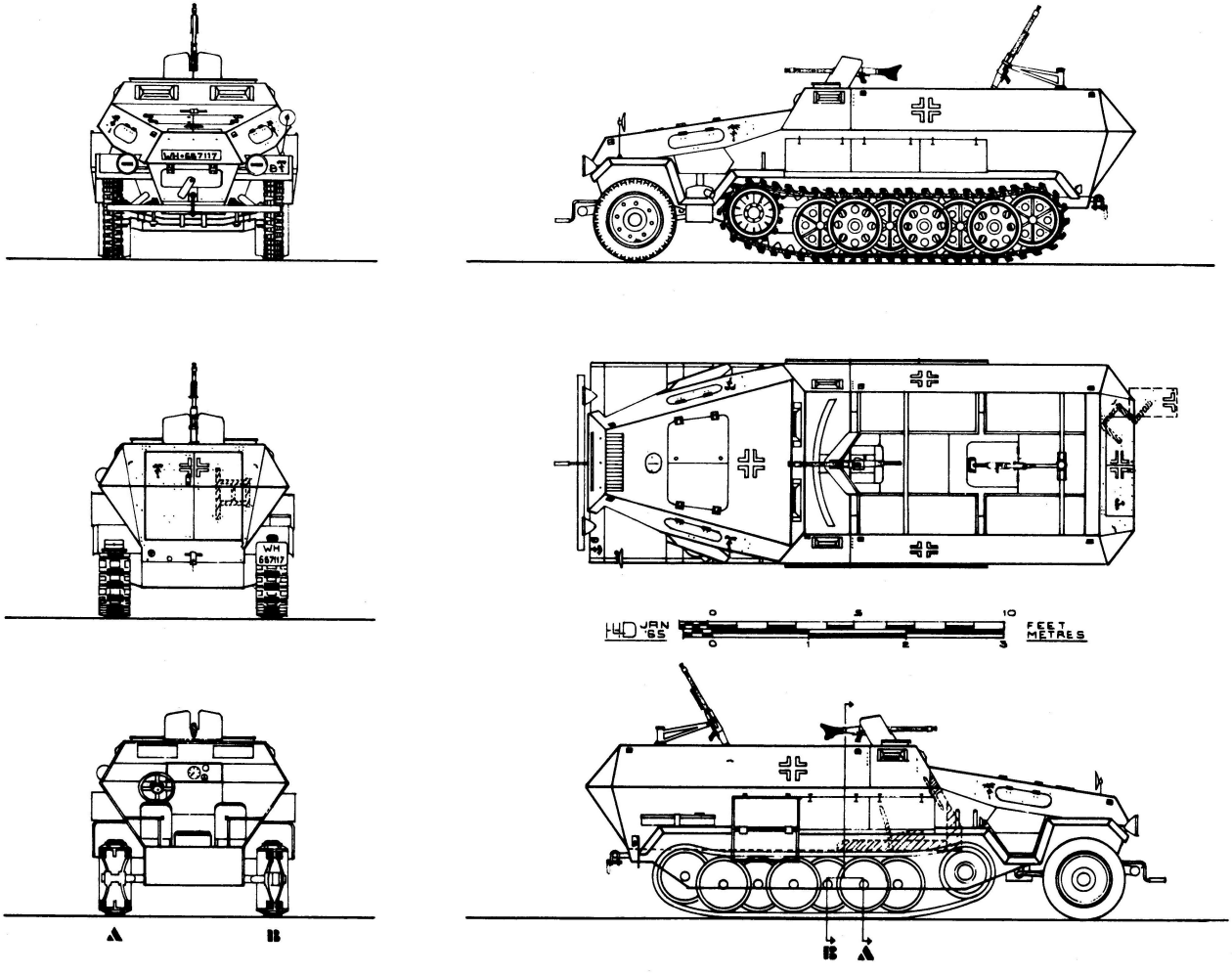
The first models entered service in time to be used at the start of the invasion of Poland on Sept. 1st. 1939. Guderian, commander of the 3rd. Pz. Div., used a Hanomag as his command vehicle on this date, becoming one of the first generals to lead his men into action on tracks instead of on a horse. A Grenadier battalion fully equipped with these vehicles saw service in the French campaign, and the Sd Kfz 251 had become standard equipment throughout the German Army by 1942.

In its basic troop-carrier form, as shown in the drawing, the vehicle seated ten men with a driver and commander. There were, however, more than twenty other variants including ambulances, command vehicles and self-propelled carriages for guns. All of the variants are described in the Bellona Handbook No.2 Part 3 "German Army Semi-tracked Vehicles 1939-45".

The drawing featured in this Bellona Print illustrates an Ausf B model of the Sd Kfz 251. The Ausf.A was externally similar, but can be distinguished by having two additional vision ports on each side of the fighting compartment. The Ausf.C and later the Ausf. D featured modified armour and superstructure layout.

The Sd Kfz 251 was underpowered and difficult to steer, especially in cross-country conditions, Limited vision and the unique slope of the steering wheel was no help for the driver. Continual detail improvement complicated the supply of spare parts, but despite this and its many handling vices, the Sd Kfz 251 was an effective and useful vehicle for which supply never satisfied demand.

Technical Details:
Loaded weight 8.4 tons; Empty 6.9 tons; Crew 2 and 10 passengers; Road speed 34 m.p.h. (55 km.p.h.), cross-country 15 m.p.h.; Max gradient 24 degrees; Fording depth 1 ft. 6½ins.; Range 200 miles; Armament 2 x 7.92 MG-34 and passengers weapons; Armour 12 mm. front surfaces, 7 mm. remainder; Engine 1 Maybach HL 42 6 cyl. 4.2 litres watercooled developing 100 b.h.p. at 2,800 r.p.m.; Gears 4 forward and 1 reverse; Suspension (tracks) torsion bar and(wheels) transverse leaf.



HANOMAG Sd Kfz 251/1 Troop Carrier - 1939
Scale 1:76 (4mm. to 1 foot). Drawn by H. L. Doyle

SU.100 Tank Destroyer (1945)

Introduced in 1945, the SU. 100 Tank Destroyer is built on the chassis of Russia's celebrated T.34 Medium Tank with which it shares a common mechanical specification. A 500 h.p. diesel engine gives it a useful road speed of over 30 m.p.h., and the suspension is of the same American Christie pattern influenced by Russia's pre-war study of foreign tank designs. Lessons learned from the German practice of mounting a comparatively large gun in a proven tank chassis, are, however, behind the SU.100 design (compare the Stu. G. III and Jagd Panther).

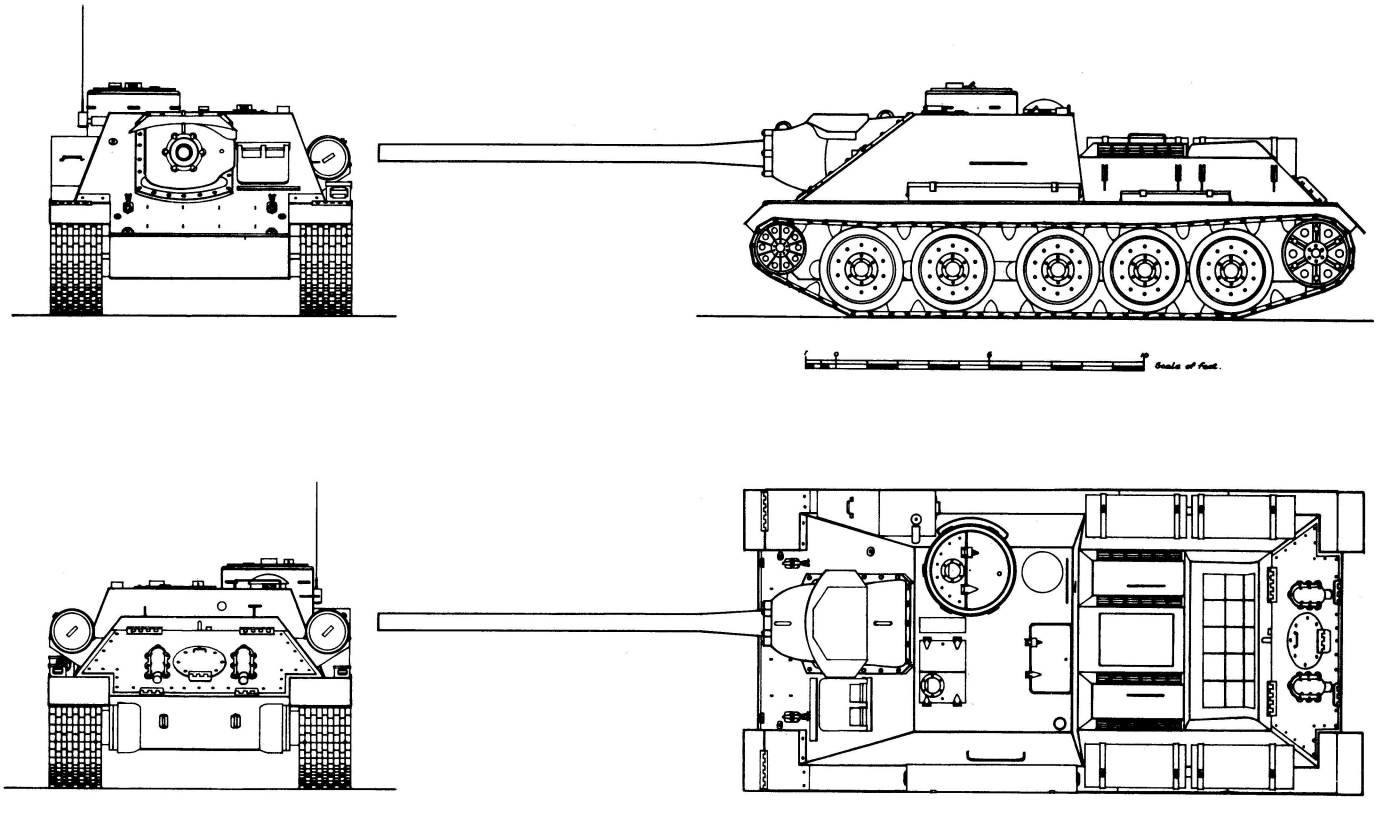
This idea had already been tried successfully in the slower but more heavily armoured JSU.122 which was an assault gun/tank destroyer on the KV or JS chassis. The SU.100 is, in fact, an up-gunned and improved version of the SU.85 which followed the JSU.122 into service in 1944. Major feature of the SU.100 is, of course, the long 54 calibre gun which must handicap manoeuvrability anywhere except on open ground. The silhouette is remarkably low — lower than the T.34 — and the uniformly sloped superstructure is broken only by the offset cupola which is forced outwards by the size of the breech.

For engine maintenance the rear deck can be opened in the conventional way, but for more liberal access to the engine — during overhaul for instance — the entire back plate can be unbolted and hinged backwards, a feature which illustrates the simplicity of the basic T.34 design. Also novel are the sprocket wheels which dispense with teeth in favour of bars just below the rim. These engage the track centre-guides. Spare track shoes are usually carried horizontally on the hull front just below the mantlet. The spare fuel tanks are optional — sometimes two are carried across the back end of the hull.

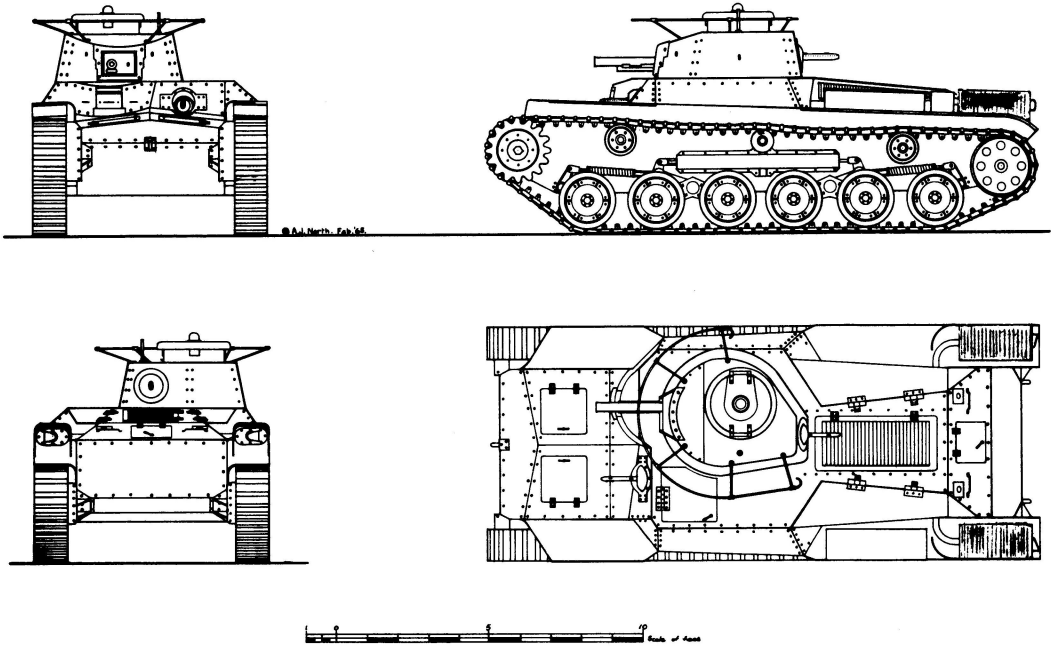
Twenty years after its introduction the SU.100 still equips the armies of Russian and her Communist (or friendly) satellite countries. An example captured in Egypt in 1956 is now on display at the R.A.C. Tank Museum in Bovington, Dorset.

Technical Details:

Loaded weight 32 tons; Engine 500 h.p. V-12 diesel; Max speed 35 m.p.h.; Fuel 80 gals.; Endurance 186 miles; Fording depth 2ft. 11ins; Armament — 1 x 100 mm., 54 cals. (40 rounds); Elevation-plus 20 degrees to minus 3 degrees. Armour — front & driver's 75 mm., mantlet 110 mm., top, 20 mm., remainder 45 mm.; Crew 4.



SU. 100 Tank Destroyer - 1945
Scale 1:76 (4mm. to 1 foot). Drawn by A. J. D. North



Type 97 Medium CHI-HA - 1937
Scale 1:76 (4mm. to 1 foot). Drawn by A. J. D. North

Type 97 Medium, CHI-HA (1937)

Among the first tanks in Japan were some Medium Mark A Whippets (Bellona Print Series I), purchased from the British Government at the end of World War I. These, together with various other foreign types, gave the Imperial Japanese Army enough experience and insight to enable native designs to go into production from 1929 onwards.

In 1937 the Type 97 Medium, known as CHI-HA, came into service and this was the heaviest and most powerful tank with which Japan went to war. More advanced designs were subsequently evolved but none saw full scale service. The only more sophisticated tank to see major action was the Type 97 Medium Special which was simply an improved version of the Type 97 Medium shown here.

Of riveted construction, the CHI-HA was inadequately armoured and feebly armed. Its most interesting design feature was the suspension which had the two pairs of inner bogies sprung horizontally while the two outside wheels were sprung diagonally outwards. The turret hatch was unusual in that it consisted of two oddly shaped flaps, one fitting inside the other. Earlier production models had cooling vents concealed beneath hinged flaps on each side of the engine casing (as shown in this drawing), but later vehicles and the Medium Specials had the vents altered to open beneath the track covers.

One major variant of the Type 97 Medium was the Commander's Tank, known as SHI-KI. This differed
m the standard model in having the complete 57 mm. gun and mantlet in the hull in place (and in the
tion) of the machine gun. The turret, in this case, was completely flat-topped, but of the same shape,
the rear facing turret machine gun remained.

The rail-like attachment shown on the turret is a radio aerial.

Technical Details:

Weight 14,3 tons; Engine Mitsubishi V-12, aircooled diesel developing 170 h.p. at 2,000 r.p.m.; Road speed 23.5 m.p.h. Range 130.5 miles; Fuel 54 gals. in three tanks (2 of 25, 1 of 4); Crew 4; Armament — One 57 mm. gun (114 rounds) and two 7.7 mm. M/G (4,035 rounds); Armour maximum 25 mm. on turret sides and hull front, 10 mm. on hull and turret tops. Fording depth 3ft. 3 ins.; Max. trench crossing 8ft. 3 ins.

Colour Scheme:

Either all olive green or else irregular patches of green, sand, and black.

Further details of Japanese tanks can be found in the Bellona Handbook No. 4.

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BELLONA PUBLICATIONS 13/35 Bridge Street, Hemel Hempstead, Herts.

Printed in England by:
Technical Print Services Limited
Brentcliffe Avenue, Carlton Road, Nottingham

ABOVE: *The SU-100 was the SU-85 improved by the fitting of a larger more powerful gun capable of dealing with the later German tanks. Saw a fair amount of service in post war years with the Armies of Nations supplied by Russia.*

BELOW: *The Commanders model of the Type 97, Medium CHI-HA was known as the SHI-KI. This version only differed by having the 57 mm cannon duplicated in the hull, in place of the machine gun. The novel shape of the cupola hatch can be seen in this photograph.*